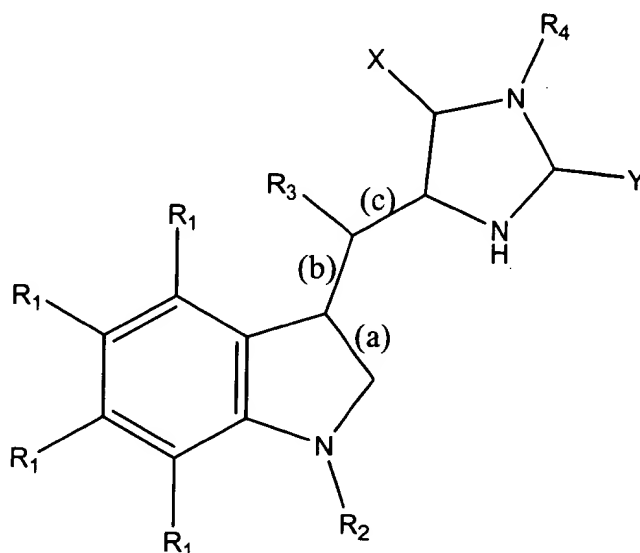


9. (Twice amended) A method for decreasing necrosis, said method comprising treating a cell with a chemical compound, said compound of the formula:



wherein

each R<sub>1</sub> is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

R<sub>2</sub> is selected from the group consisting of hydrogen, alkyl, and acyl;

R<sub>3</sub> is selected from the group consisting of alkyl, acyl, halogen, hydrogen, and hydroxyl;

R<sub>4</sub> is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

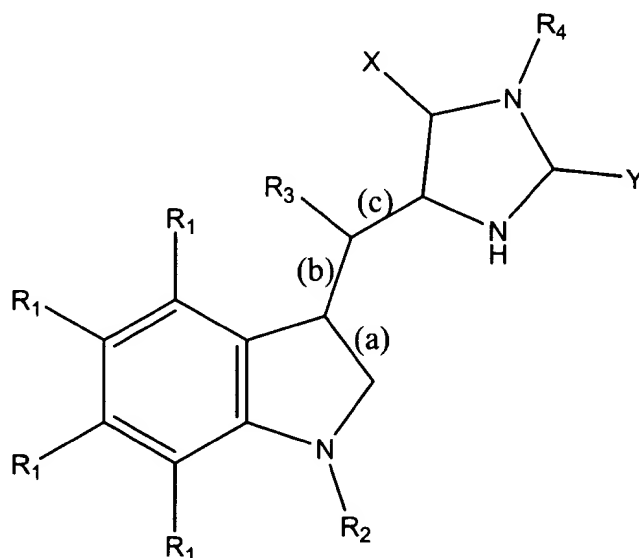
X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and -SR<sub>5</sub>, where R<sub>5</sub> is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

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24. (Twice amended) A method for treating a condition in a patient, wherein decreasing necrosis is of benefit, said method comprising the steps of administering a chemical compound having the formula:



to said subject, in a dosage sufficient to decrease necrosis, wherein

each  $R_1$  is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$  is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$  is selected from the group consisting of alkyl, acyl, halogen, hydrogen, and hydroxyl;

$R_4$  is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and  $-SR_5$ , where  $R_5$  is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

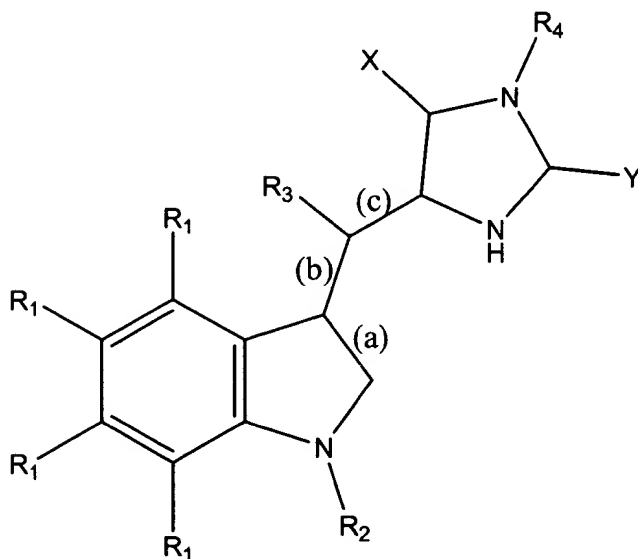
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41. (Amended) The method of claim 24, wherein said condition is a neurodegenerative disease, stroke, liver disease, pancreatic disease, ischemic brain injury, ischemic heart injury, ischemic injury to non-cardiac and non-neural tissue, head trauma, necrotic ulceration, septic shock, coronary heart disease, gastrointestinal disease, tuberculosis, viral infection, or conditions associated with HIV infection or AIDS.

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### Claims as Pending

9. (Twice amended) A method for decreasing necrosis, said method comprising treating a cell with a chemical compound, said compound of the formula:



wherein

each  $R_1$  is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$  is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$  is selected from the group consisting of alkyl, acyl, halogen, hydrogen, and hydroxyl;

$R_4$  is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

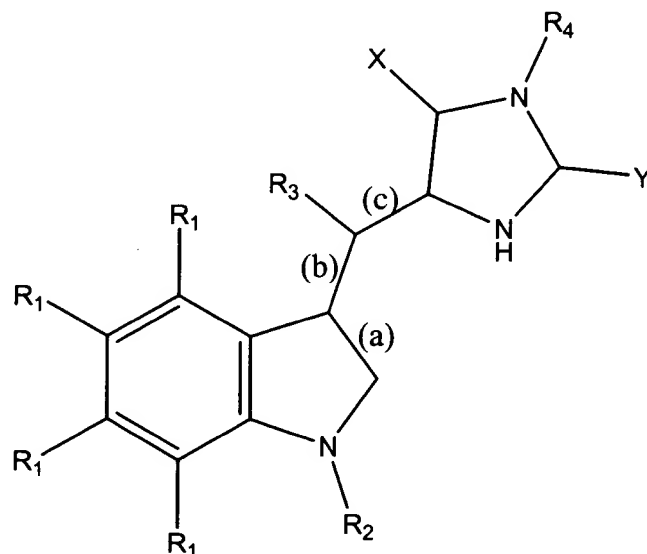
$X$  is selected from the group consisting of  $=O$ ,  $-OH$  and  $-H$ ;

$Y$  is selected from the group consisting of  $=S$  and  $-SR_5$ , where  $R_5$  is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

10. The method of claim 9, wherein in said compound  
each  $R_1$  is hydrogen;  
 $R_2$  and  $R_3$  are each hydrogen;  
 $R_4$  is a methyl group;  
 $X$  is  $=O$ ;  
 $Y$  is  $=S$ ;  
bond (a) is a double bond; and  
bonds (b) and (c) are each single bonds.
17. (Amended) The method of claim 9, wherein said cell is capable of undergoing necrosis in the presence of zVAD-fmk and  $TNF\alpha$ .
18. (Amended) The method of claim 9, wherein said cell is capable of undergoing necrosis in the presence of zVAD-fmk and DMSO.
19. (Amended) The method of claim 9, wherein said cell is mammalian.
20. The method of claim 19, wherein said cell is human.
21. The method of claim 19, wherein said cell is a neuron.
22. The method of claim 19, wherein said cell is a rodent cell.
23. (Amended) The method of claim 9, wherein said compound is in a pharmaceutically acceptable carrier.

24. (Twice amended) A method for treating a condition in a patient, wherein decreasing necrosis is of benefit, said method comprising the steps of administering a chemical compound having the formula:



to said subject, in a dosage sufficient to decrease necrosis, wherein

each  $R_1$  is independently selected from the group consisting of hydrogen, methyl, carboxy, hydroxyl, methoxyl, amino, and nitro;

$R_2$  is selected from the group consisting of hydrogen, alkyl, and acyl;

$R_3$  is selected from the group consisting of alkyl, acyl, halogen, hydrogen, and hydroxyl;

$R_4$  is selected from the group consisting of methyl, hydroxyl, carboxyl, and linear and branching alkyl groups;

X is selected from the group consisting of =O, -OH and -H;

Y is selected from the group consisting of =S and  $-SR_5$ , where  $R_5$  is either hydrogen or an alkyl group; and

each of the bonds (a), (b), and (c) independently is either a double or single bond, provided, however, that bond (a) and bond (b) are not both double bonds.

25. The method of claim 24, wherein in said compound

each  $R_1$  is hydrogen;

$R_2$  and  $R_3$  are each hydrogen;

$R_4$  is a methyl group;

X is =O;

Y is =S;

bond (a) is a double bond; and

bonds (b) and (c) are each single bonds.

32. (Amended) The method of claim 24, wherein said condition is a neurodegenerative disease.

33. (Amended) The method of claim 32, wherein said neurodegenerative disease is selected from the group consisting of Alzheimer's disease, Huntington's disease, cerebral ischemia, stroke, amyotrophic lateral sclerosis, multiple sclerosis, Lewy body disease, Menkes, disease, Wilson disease, Creutzfeldt-Jakob disease, and Fahr disease.

34. (Amended) The method of claim 24, wherein said condition is selected from the group consisting of ischemic brain injury, ischemic heart injury, and head trauma.

35. (Amended) The method of claim 24, wherein said subject is a mammal.

36. The method of claim 35, wherein said subject is a human.

37. The method of claim 35, wherein said subject is a rodent.

41. (Amended) The method of claim 24, wherein said condition is a neurodegenerative disease, stroke, liver disease, pancreatic disease, ischemic brain injury, ischemic heart injury, ischemic injury to non-cardiac and non-neural tissue, head trauma, necrotic ulceration, septic shock, coronary heart disease, gastrointestinal disease, tuberculosis, viral infection, or conditions associated with HIV infection or AIDS.